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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 09/927,267 | 08/10/2001 | Christopher D. Creech | 018512-006510US | 6230 |

20350 7590 09/29/2004

TOWNSEND AND TOWNSEND AND CREW, LLP
TWO EMBARCADERO CENTER
EIGHTH FLOOR
SAN FRANCISCO, CA 94111-3834

| EXAMINER | |
|---|---|
| LI, RUIXIANG | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 1646 | |

DATE MAILED: 09/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/927,267 | CREECH ETAL. | |
| | Examiner | Art Unit | |
| | Ruixiang Li | 1646 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *7/12/2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1,3,8,19 and 20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,8,19 and 20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☒ Other: *Sequence alignment*.

## DETAILED ACTION

### Status of Application, Amendments, and/or Claims

It is noted that Applicants filed appeal brief on 7/12/2004. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Applicants' amendment after final filed on March 19, 2004 has been entered in full. Claims 1, 3, and 19 have been amended. Claims 2, 4, and 7 have been canceled. Claims 1, 3, 8, 19, and 20 are pending and under consideration.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office Action.

### Withdrawn Rejections

All the rejections of record have been withdrawn in view of Applicants' amendment to the claims and arguement.

### Claim Rejections Under 35 U. S. C. § 102 (e)

Claims 1, 3, 8, 19, and 20 under 35 U.S.C. 102(e) as being anticipated by Guegler et al. (US 2003/0013156 A1, publication date: January 16, 2003; priority date: June 13, 2000).

Guegler et al. teach a transporter protein (SEQ ID NO: 2) that is related to the cyclic nucleotide-gated ion channel subfamily (see, e.g., [0002] and [0060]) and that is 100% identical to the polypeptide of SEQ ID NO: 1 of the present invention (see attached sequence alignment and Figure 2 of 60/211,223). Guegler et al. also teach an isolated nucleic acid comprising a nucleotide sequence that encodes the protein, a nucleic acid vector, and a host cell containing the vector (see claims 4-7). Guegler et al. further teach an isolated nucleic acid, which is identical to SEQ ID NO: 3 (see attached sequence in Figure 1 of 60/211,223). It is noted that the nucleic acid sequences, which are present in US 2003/0013156 A1 (application 10/207, 951) and its parent application 09/735, 932, comprises a nucleotide sequence that is 99.8% identical to SEQ ID NO: 3 (see attached sequence alignment). However, the provisional application 60/211, 223 does disclose an isolated nucleic acid, which is identical to SEQ ID NO: 3, as noted above. Accordingly, the reference of Guegler et al. meets the limitations of claims 1, 3, 8, 19, and 20.

**Conclusion**

No claims are allowed.

**Advisory Information**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ruixiang Li whose telephone number is (571) 272-0875. The examiner can normally be reached on Monday through Friday from 8:30 am to 5:00

pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brenda Brumback, can be reached on (571) 272-0961.

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [Brenda.Brumback@uspto.gov]. All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571) 272-1600.

Ruixiang Li, Ph.D.
Examiner
September 21, 2004

Brenda Brumback
BRENDA BRUMBACK
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1600

GenCore version 5.1.6


OM protein - protein search, using sw model

Run on: September 11, 2004, 00:41:10 ; Search time 450 Seconds
(without alignments)
409.770 Million cell updates/sec

Title: US-09-927-267-1
Perfect score: 2989
Sequence: 1 MSQDTKVKTTESSPPAPSKA.....EGTSKDEEGRASQEGPPGPE 575

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 1335176 seqs, 320689617 residues

Total number of hits satisfying chosen parameters: 1335176

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

| Result No. | Score | % Query Match | Length | DB | ID | Description |
|---|---|---|---|---|---|---|
| 1 | 2989 | 100.0 | 575 | 9 | US-09-735-932-2 | Sequence 2, Appli |
| 2 | 2989 | 100.0 | 575 | 9 | US-09-927-267-1 | Sequence 1, Appli |
| 3 | 2989 | 100.0 | 575 | 14 | US-10-207-951-2 | Sequence 2, Appli |
| 4 | 2984 | 99.8 | 575 | 10 | US-09-842-758-30 | Sequence 30, Appl |
| 5 | 2984 | 99.8 | 575 | 12 | US-10-174-333-30 | Sequence 30, Appl |
| 6 | 2984 | 99.8 | 575 | 16 | US-10-311-624-1 | Sequence 1, Appli |
| 7 | 2957.5 | 98.9 | 578 | 10 | US-09-842-758-28 | Sequence 28, Appl |
| 8 | 2957.5 | 98.9 | 578 | 12 | US-10-174-333-28 | Sequence 28, Appl |
| 9 | 2811 | 94.0 | 575 | 9 | US-09-735-932-4 | Sequence 4, Appli |
| 10 | 2811 | 94.0 | 575 | 9 | US-09-927-267-16 | Sequence 16, Appl |
| 11 | 2811 | 94.0 | 575 | 10 | US-09-842-758-74 | Sequence 74, Appl |
| 12 | 2811 | 94.0 | 575 | 12 | US-10-174-333-74 | Sequence 74, Appl |
| 13 | 2394 | 80.1 | 1704 | 14 | US-10-207-951-4 | Sequence 4, Appli |
| 14 | 1568 | 52.5 | 663 | 14 | US-10-029-677-16 | Sequence 16, Appl |
| 15 | 1565 | 52.4 | 664 | 14 | US-10-295-573-5 | Sequence 5, Appli |
| 16 | 1562 | 52.3 | 664 | 9 | US-09-735-927-4 | Sequence 4, Appli |
| 17 | 1562 | 52.3 | 732 | 10 | US-09-842-758-73 | Sequence 73, Appl |
| 18 | 1562 | 52.3 | 732 | 12 | US-10-174-333-73 | Sequence 73, Appl |
| 19 | 1562 | 52.3 | 732 | 14 | US-10-029-677-15 | Sequence 15, Appl |
| 20 | 1558 | 52.1 | 664 | 14 | US-10-029-677-18 | Sequence 18, Appl |
| 21 | 1558 | 52.1 | 664 | 14 | US-10-087-217-2 | Sequence 2, Appli |
| 22 | 1558 | 52.1 | 664 | 14 | US-10-295-573-8 | Sequence 8, Appli |
| 23 | 1554 | 52.0 | 634 | 14 | US-10-295-573-7 | Sequence 7, Appli |
| 24 | 1554 | 52.0 | 664 | 14 | US-10-087-217-6 | Sequence 6, Appli |
| 25 | 1554 | 52.0 | 664 | 14 | US-10-295-573-6 | Sequence 6, Appli |
| 26 | 1549.5 | 51.8 | 694 | 10 | US-09-842-758-75 | Sequence 75, Appl |
| 27 | 1549.5 | 51.8 | 694 | 12 | US-10-174-333-75 | Sequence 75, Appl |
| 28 | 1549.5 | 51.8 | 694 | 12 | US-09-855-828-14 | Sequence 14, Appl |
| 29 | 1549.5 | 51.8 | 694 | 14 | US-10-345-680-26 | Sequence 26, Appl |
| 30 | 1549 | 51.8 | 664 | 14 | US-10-087-217-4 | Sequence 4, Appli |
| 31 | 1547 | 51.8 | 664 | 14 | US-10-029-677-17 | Sequence 17, Appl |
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| 33 | 1538.5 | 51.5 | 690 | 12 | US-09-855-828-15 | Sequence 15, Appl |
| 34 | 1535 | 51.4 | 664 | 9 | US-09-735-927-2 | Sequence 2, Appli |
| 35 | 1535 | 51.4 | 664 | 13 | US-10-034-843-2 | Sequence 2, Appli |
| 36 | 1535 | 51.4 | 664 | 14 | US-10-168-651-7 | Sequence 7, Appli |
| 37 | 1535 | 51.4 | 664 | 14 | US-10-114-153-18 | Sequence 18, Appl |
| 38 | 1532 | 51.3 | 664 | 14 | US-10-029-677-24 | Sequence 24, Appl |
| 39 | 1529 | 51.2 | 664 | 14 | US-10-029-677-2 | Sequence 2, Appli |
| 40 | 1208 | 40.4 | 239 | 15 | US-10-189-507-10 | Sequence 10, Appl |
| 41 | 1196 | 40.0 | 239 | 15 | US-10-189-507-6 | Sequence 6, Appli |
| 42 | 779 | 26.1 | 239 | 15 | US-10-189-507-5 | Sequence 5, Appli |
| 43 | 773 | 25.9 | 239 | 15 | US-10-189-507-9 | Sequence 9, Appli |
| 44 | 769 | 25.7 | 239 | 15 | US-10-189-507-12 | Sequence 12, Appl |
| 45 | 655 | 21.9 | 809 | 12 | US-09-855-828-1 | Sequence 1, Appli |

ALIGNMENTS

RESULT 1
US-09-735-932-2
; Sequence 2, Application US/09735932
; Patent No. US20020037548A1
; GENERAL INFORMATION:
; APPLICANT: GUEGLER, Karl et al
; TITLE OF INVENTION: ISOLATED HUMAN TRANSPORTER PROTEINS,
; TITLE OF INVENTION: NUCLEIC ACID MOLECULES ENCODING HUM AN TRANSPORTER PROTEINS,
; TITLE OF INVENTION: AND USES THEREOF
; FILE REFERENCE: CL000663
; CURRENT APPLICATION NUMBER: US/09/735,932
; CURRENT FILING DATE: 2000-12-14
; NUMBER OF SEQ ID NOS: 4
; SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 2
; LENGTH: 575
; TYPE: PRT
; ORGANISM: Human
US-09-735-932-2

60/211,223, 6/13/2000

Query Match 100.0%; Score 2989; DB 9; Length 575;
Best Local Similarity 100.0%; Pred. No. 2.8e-266;
Matches 575; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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RESULT 2
US-09-927-267-1
; Sequence 1, Application US/09927267
; Publication No. US20020182691A1
; GENERAL INFORMATION:
; APPLICANT: Creech, Christopher D.
; APPLICANT: Jegla, Timothy J.
; APPLICANT: ICAgen, Inc.
; TITLE OF INVENTION: CNG2B: A No. US20020182691A1el Human Cyclic Nucleotide-Gated Ion
; TITLE OF INVENTION: Channel
; FILE REFERENCE: 018512-006510US
; CURRENT APPLICATION NUMBER: US/09/927,267
; CURRENT FILING DATE: 2001-08-10
; PRIOR APPLICATION NUMBER: US 60/226,253
; PRIOR FILING DATE: 2000-08-17
; NUMBER OF SEQ ID NOS: 16
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 1
; LENGTH: 575
; TYPE: PRT
; ORGANISM: Homo sapiens
; FEATURE:
; OTHER INFORMATION: cyclic nucleotide-gated cation channel 2B (CNG2B)
US-09-927-267-1

Query Match 100.0%; Score 2989; DB 9; Length 575;
Best Local Similarity 100.0%; Pred. No. 2.8e-266;
Matches 575; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Qy          1 MSQDTKVKTTESSPPAPSKARKLLPVLDPSGDYYYWWLNTMVFPVMYNLIILVCRACFPD 60
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Qy        121 SLMPTDVVYVRLGPHTPTLRLNRFLRAPRLFEAFDRTETRTAYPNAFRIAKLMLYIFVVI 180
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Qy        301 RRVIDWYQHLQINKKMTNEVAILQHLPERLRAEVAVSVHLSTLSRVQIFQNCEASLLEEL 360
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Qy        361 VLKLQPQTYSPGEYVCRKGDIGQEMYIIREGQLAVVADDGITQYAVLGAGLYFGEISIIN 420
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Qy        421 IKGNMSGNRRTANIKSLGYSDLFCLSKEDLREVLSEYPQAQTIMEEKGREILLKMNKLDV 480
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RESULT 3
US-10-207-951-2
; Sequence 2, Application US/10207951
; Publication No. US20030013156A1
; GENERAL INFORMATION:
; APPLICANT: Karl GUEGLER et al.
; TITLE OF INVENTION: ISOLATED HUMAN TRANSPORTER PROTEINS,
; TITLE OF INVENTION: NUCLEIC ACID MOLECULES ENCODING HUMAN TRANSPORTER PROTEINS
; TITLE OF INVENTION: AND USES THEREOF
; FILE REFERENCE: CL000663CON
; CURRENT APPLICATION NUMBER: US/10/207,951
; CURRENT FILING DATE: 2002-07-31
; PRIOR APPLICATION NUMBER: 09/735,932
; PRIOR FILING DATE: 2000-12-14
; PRIOR APPLICATION NUMBER: 60/211,223
; PRIOR FILING DATE: 2000-06-13
; NUMBER OF SEQ ID NOS: 25
; SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 2
; LENGTH: 575
; TYPE: PRT
; ORGANISM: Homo sapiens
US-10-207-951-2

Query Match 100.0%; Score 2989; DB 14; Length 575;
Best Local Similarity 100.0%; Pred. No. 2.8e-266;
Matches 575; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Qy         61 LQHGYLVAWLVLDYTSDLLYLLDMVVRFHTGFLEQGILVVDKGRISSRYVRTWSFFLDLA 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 LQHGYLVAWLVLDYTSDLLYLLDMVVRFHTGFLEQGILVVDKGRISSRYVRTWSFFLDLA 120

Qy        121 SLMPTDVVYVRLGPHTPTLRLNRFLRAPRLFEAFDRTETRTAYPNAFRIAKLMLYIFVVI 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 SLMPTDVVYVRLGPHTPTLRLNRFLRAPRLFEAFDRTETRTAYPNAFRIAKLMLYIFVVI 180

Qy        181 HWNSCLYFALSRYLGFGRDAWVYPDPAQPGFERLRRQYLYSFYFSTLILTTVGDTPPPAR 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 HWNSCLYFALSRYLGFGRDAWVYPDPAQPGFERLRRQYLYSFYFSTLILTTVGDTPPPAR 240

Qy        241 EEEYLFMVGDFLLAVMGFATIMGSMSSVIYNMNTADAAFYPDHALVKKYMKLQHVNRKLE 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 EEEYLFMVGDFLLAVMGFATIMGSMSSVIYNMNTADAAFYPDHALVKKYMKLQHVNRKLE 300

Qy        301 RRVIDWYQHLQINKKMTNEVAILQHLPERLRAEVAVSVHLSTLSRVQIFQNCEASLLEEL 360
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                 ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        301 RRVIDWYQHLQINKKMTNEVAILQHLPERLRAEVAVSVHLSTLSRVQIFQNCEASLLEEL 360

Qy        361 VLKLQPQTYSPGEYVCRKGDIGQEMYIIREGQLAVVADDGITQYAVLGAGLYFGEISIIN 420
                 ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        361 VLKLQPQTYSPGEYVCRKGDIGQEMYIIREGQLAVVADDGITQYAVLGAGLYFGEISIIN 420

Qy        421 IKGNMSGNRRTANIKSLGYSDLFCLSKEDLREVLSEYPQAQTIMEEKGREILLKMNKLDV 480
                 ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        421 IKGNMSGNRRTANIKSLGYSDLFCLSKEDLREVLSEYPQAQTIMEEKGREILLKMNKLDV 480

Qy        481 NAEAAEIALQEATESRLRGLDQQLDDLQTKFARLLAELESSALKIAYRIERLEWQTREWP 540
                 ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        481 NAEAAEIALQEATESRLRGLDQQLDDLQTKFARLLAELESSALKIAYRIERLEWQTREWP 540

Qy        541 MPEDLAEADDEGEPEEGTSKDEEGRASQEGPPGPE 575
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Db        541 MPEDLAEADDEGEPEEGTSKDEEGRASQEGPPGPE 575


RESULT 4
US-09-842-758-30
; Sequence 30, Application US/09842758
; Publication No. US20030083244A1
; GENERAL INFORMATION:
;  APPLICANT: Vernet, Corine A. M.
;  APPLICANT:  Fernandes, Elma R
;  APPLICANT:  Gerlach, Valerie
;  APPLICANT:  Shimkets, Richard A
;  APPLICANT:  Malyankar, Uriel M
;  APPLICANT:  Boldog, Ferenc L
;  APPLICANT:  Zerhusen, Bryan D
;  APPLICANT:  Spytek, Kimberly A
;  APPLICANT:  Majumder, Kumud
;  APPLICANT:  Tchernev, Velizar T
;  APPLICANT:  Padigaru, Muralidhara
;  APPLICANT:  Patturajan, Meera
;  APPLICANT:  Burgess, Catherine E
;  APPLICANT:  Gangolli, Esha A
;  APPLICANT:  Smithson, Glennda
;  APPLICANT:  Pastelli, Luca
;  APPLICANT:  MacDougall, John R
;  APPLICANT:  Tappier, Raymond J
;  APPLICANT:  Grosse, William M
;  APPLICANT:  Edward, Szekeres S
;  APPLICANT:  Alsobrook II, John P
;  TITLE OF INVENTION: No. US20030083244A1el Proteins and Nucleic Acids Encoding Same
;  FILE REFERENCE: 15966-783
;  CURRENT APPLICATION NUMBER: US/09/842,758
;  CURRENT FILING DATE:  2001-04-25
;  PRIOR APPLICATION NUMBER: 60/200,158
;  PRIOR FILING DATE: 2000-04-26
;  PRIOR APPLICATION NUMBER: 60/200,613
;  PRIOR FILING DATE: 2000-04-28
;  PRIOR APPLICATION NUMBER: 60/200,780
;  PRIOR FILING DATE: 2000-04-28
;  PRIOR APPLICATION NUMBER: 60/201,006
;  PRIOR FILING DATE: 2000-05-01
;  PRIOR APPLICATION NUMBER: 60/201,007
;  PRIOR FILING DATE: 2000-05-01
;  PRIOR APPLICATION NUMBER: 60/201,236
;  PRIOR FILING DATE: 2000-05-01
;  PRIOR APPLICATION NUMBER: 60/201,238
;  PRIOR FILING DATE: 2000-05-01
;  PRIOR APPLICATION NUMBER: 60/201,186
;  PRIOR FILING DATE: 2000-05-02
;  PRIOR APPLICATION NUMBER: 60/201,474
;  PRIOR FILING DATE: 2000-05-03
;  PRIOR APPLICATION NUMBER: 60/201,508
;  PRIOR FILING DATE: 2000-05-03
;  PRIOR APPLICATION NUMBER: 60/220,591
;  PRIOR FILING DATE: 2000-07-25
;  PRIOR APPLICATION NUMBER: 60/232,678
;  PRIOR FILING DATE: 2000-09-15
;  PRIOR APPLICATION NUMBER: 60/263,217
;  PRIOR FILING DATE: 2001-01-22
;  PRIOR APPLICATION NUMBER: 60/265,160
;  PRIOR FILING DATE: 2001-01-30
;  NUMBER OF SEQ ID NOS: 113
;  SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 30
;  LENGTH: 575
;  TYPE: PRT
;  ORGANISM: Homo sapiens
US-09-842-758-30

  Query Match             99.8%;  Score 2984;  DB 10;  Length 575;
  Best Local Similarity   99.8%;  Pred. No. 8.2e-266;
  Matches  574;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy          1 MSQDTKVKTTESSPPAPSKARKLLPVLDPSGDYYYWWLNTMVFPVMYNLIILVCRACFPD 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MSQDTKVKTTESSPPAPSKARKLLPVLDPSGDYYYWWLNTMVFPVMYNLIILVCRACFPD 60

Qy         61 LQHGYLVAWLVLDYTSDLLYLLDMVVRFHTGFLEQGILVVDKGRISSRYVRTWSFFLDLA 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 LQHGYLVAWLVLDYTSDLLYLLDMVVRFHTGFLEQGILVVDKGRISSRYVRTWSFFLDLA 120

Qy        121 SLMPTDVVYVRLGPHTPTLRLNRFLRAPRLFEAFDRTETRTAYPNAFRIAKLMLYIFVVI 180
              |||||||||||||||||||||||||||||||| ||||||||||||||||||||||||||||||
Db        121 SLMPTDVVYVRLGPHTPTLRLNRFLRAPRLFEAFDRAETRTAYPNAFRIAKLMLYIFVVI 180

Qy        181 HWNSCLYFALSRYLGFGRDAWVYPDPAQPGFERLRRQYLYSFYFSTLILTTVGDTPPPAR 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 HWNSCLYFALSRYLGFGRDAWVYPDPAQPGFERLRRQYLYSFYFSTLILTTVGDTPPPAR 240

Qy        241 EEEYLFMVGDFLLAVMGFATIMGSMSSVIYNMNTADAAFYPDHALVKKYMKLQHVNRKLE 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 EEEYLFMVGDFLLAVMGFATIMGSMSSVIYNMNTADAAFYPDHALVKKYMKLQHVNRKLE 300

Qy        301 RRVIDWYQHLQINKKMTNEVAILQHLPERLRAEVAVSVHLSTLSRVQIFQNCEASLLEEL 360
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        301 RRVIDWYQHLQINKKMTNEVAILQHLPERLRAEVAVSVHLSTLSRVQIFQNCEASLLEEL 360

Qy        361 VLKLQPQTYSPGEYVCRKGDIGQEMYIIREGQLAVVADDGITQYAVLGAGLYFGEISIIN 420
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        361 VLKLQPQTYSPGEYVCRKGDIGQEMYIIREGQLAVVADDGITQYAVLGAGLYFGEISIIN 420

Qy        421 IKGNMSGNRRTANIKSLGYSDLFCLSKEDLREVLSEYPQAQTIMEEKGREILLKMNKLDV 480
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        421 IKGNMSGNRRTANIKSLGYSDLFCLSKEDLREVLSEYPQAQTIMEEKGREILLKMNKLDV 480

Qy        481 NAEAAEIALQEATESRLRGLDQQLDDLQTKFARLLAELESSALKIAYRIERLEWQTREWP 540
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        481 NAEAAEIALQEATESRLRGLDQQLDDLQTKFARLLAELESSALKIAYRIERLEWQTREWP 540

Qy        541 MPEDLAEADDEGEPEEGTSKDEEGRASQEGPPGPE 575
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Db        541 MPEDLAEADDEGEPEEGTSKDEEGRASQEGPPGPE 575


RESULT 5
US-10-174-333-30
; Sequence 30, Application US/10174333
; Publication No. US20040029220A1
; GENERAL INFORMATION:
;  APPLICANT: Vernet, Corine A.M.
;  APPLICANT:  Fernandes, Elma R.
;  APPLICANT:  Gerlach, Valerie
;  APPLICANT:  Malyankar, Uriel M.
;  APPLICANT:  Boldog, Ferenc L.
;  APPLICANT:  Zerhusen, Bryan D.
;  APPLICANT:  Spytek, Kimberly A.
;  APPLICANT:  Majumder, Kumud
;  APPLICANT:  Tchernev, Velizar T.
;  APPLICANT:  Padigaru, Muralidhara
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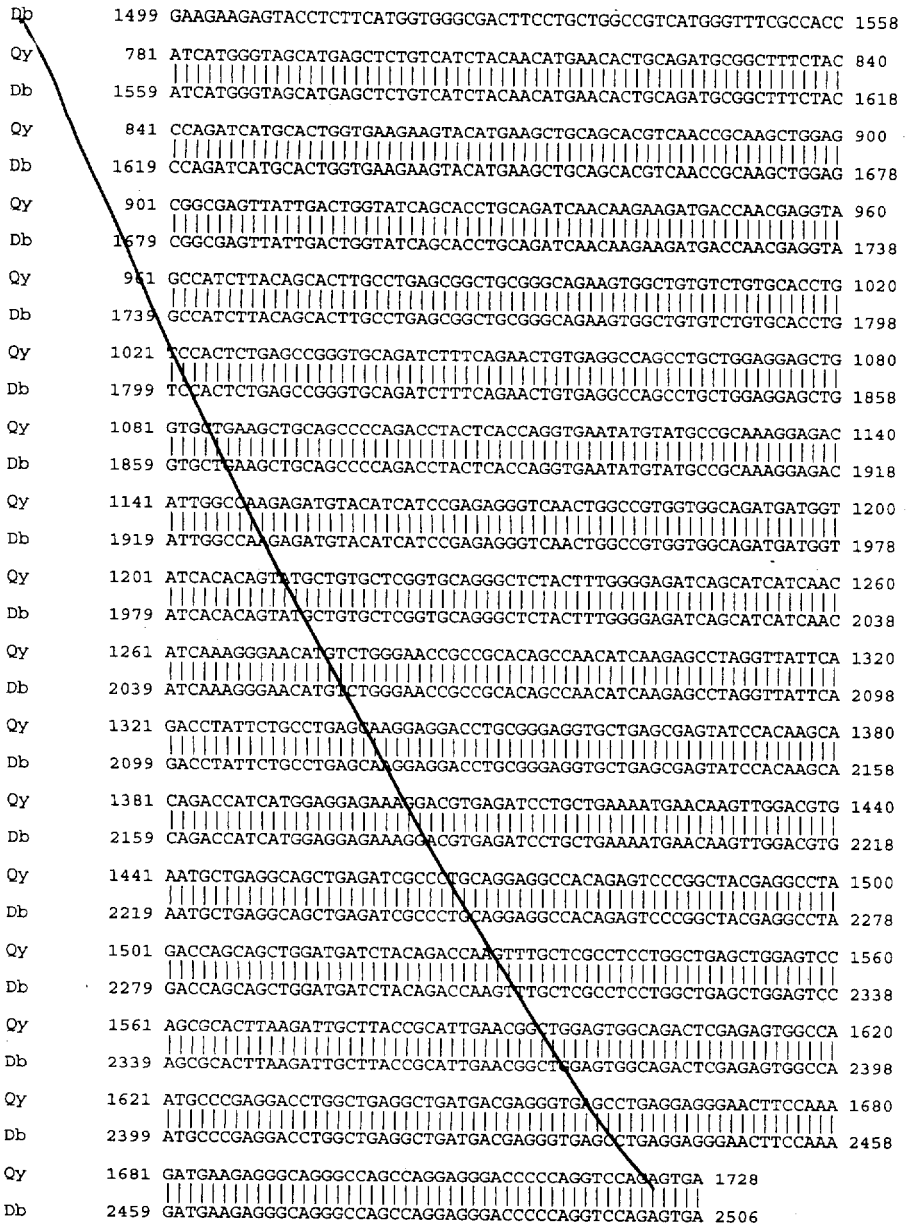

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Db       1499 GAAGAAGAGTACCTCTTCATGGTGGGCGACTTCCTGCTGGCCGTCATGGGTTTCGCCACC 1558
Qy        781 ATCATGGGTAGCATGAGCTCTGTCATCTACAACATGAACACTGCAGATGCGGCTTTCTAC 840
Db       1559 ATCATGGGTAGCATGAGCTCTGTCATCTACAACATGAACACTGCAGATGCGGCTTTCTAC 1618
Qy        841 CCAGATCATGCACTGGTGAAGAAGTACATGAAGCTGCAGCACGTCAACCGCAAGCTGGAG 900
Db       1619 CCAGATCATGCACTGGTGAAGAAGTACATGAAGCTGCAGCACGTCAACCGCAAGCTGGAG 1678
Qy        901 CGGCGAGTTATTGACTGGTATCAGCACCTGCAGATCAACAAGAAGATGACCAACGAGGTA 960
Db       1679 CGGCGAGTTATTGACTGGTATCAGCACCTGCAGATCAACAAGAAGATGACCAACGAGGTA 1738
Qy        961 GCCATCTTACAGCACTTGCCTGAGCGGCTGCGGGCAGAAGTGGCTGTGTCTGTGCACCTG 1020
Db       1739 GCCATCTTACAGCACTTGCCTGAGCGGCTGCGGGCAGAAGTGGCTGTGTCTGTGCACCTG 1798
Qy       1021 TCCACTCTGAGCCGGGTGCAGATCTTTCAGAACTGTGAGGCCAGCCTGCTGGAGGAGCTG 1080
Db       1799 TCCACTCTGAGCCGGGTGCAGATCTTTCAGAACTGTGAGGCCAGCCTGCTGGAGGAGCTG 1858
Qy       1081 GTGCTGAAGCTGCAGCCCCAGACCTACTCACCAGGTGAATATGTATGCCGCAAAGGAGAC 1140
Db       1859 GTGCTGAAGCTGCAGCCCCAGACCTACTCACCAGGTGAATATGTATGCCGCAAAGGAGAC 1918
Qy       1141 ATTGGCCAAGAGATGTACATCATCCGAGAGGGTCAACTGGCCGTGGTGGCAGATGATGGT 1200
Db       1919 ATTGGCCAAGAGATGTACATCATCCGAGAGGGTCAACTGGCCGTGGTGGCAGATGATGGT 1978
Qy       1201 ATCACACAGTATGCTGTGCTCGGTGCAGGGCTCTACTTTGGGGAGATCAGCATCATCAAC 1260
Db       1979 ATCACACAGTATGCTGTGCTCGGTGCAGGGCTCTACTTTGGGGAGATCAGCATCATCAAC 2038
Qy       1261 ATCAAAGGGAACATGTCTGGGAACCGCCGCACAGCCAACATCAAGAGCCTAGGTTATTCA 1320
Db       2039 ATCAAAGGGAACATGTCTGGGAACCGCCGCACAGCCAACATCAAGAGCCTAGGTTATTCA 2098
Qy       1321 GACCTATTCTGCCTGAGCAAGGAGGACCTGCGGGAGGTGCTGAGCGAGTATCCACAAGCA 1380
Db       2099 GACCTATTCTGCCTGAGCAAGGAGGACCTGCGGGAGGTGCTGAGCGAGTATCCACAAGCA 2158
Qy       1381 CAGACCATCATGGAGGAGAAAGGACGTGAGATCCTGCTGAAAATGAACAAGTTGGACGTG 1440
Db       2159 CAGACCATCATGGAGGAGAAAGGACGTGAGATCCTGCTGAAAATGAACAAGTTGGACGTG 2218
Qy       1441 AATGCTGAGGCAGCTGAGATCGCCCTGCAGGAGGCCACAGAGTCCCGGCTACGAGGCCTA 1500
Db       2219 AATGCTGAGGCAGCTGAGATCGCCCTGCAGGAGGCCACAGAGTCCCGGCTACGAGGCCTA 2278
Qy       1501 GACCAGCAGCTGGATGATCTACAGACCAAGTTTGCTCGCCTCCTGGCTGAGCTGGAGTCC 1560
Db       2279 GACCAGCAGCTGGATGATCTACAGACCAAGTTTGCTCGCCTCCTGGCTGAGCTGGAGTCC 2338
Qy       1561 AGCGCACTTAAGATTGCTTACCGCATTGAACGGCTGGAGTGGCAGACTCGAGAGTGGCCA 1620
Db       2339 AGCGCACTTAAGATTGCTTACCGCATTGAACGGCTGGAGTGGCAGACTCGAGAGTGGCCA 2398
Qy       1621 ATGCCCGAGGACCTGGCTGAGGCTGATGACGAGGGTGAGCCTGAGGAGGGAACTTCCAAA 1680
Db       2399 ATGCCCGAGGACCTGGCTGAGGCTGATGACGAGGGTGAGCCTGAGGAGGGAACTTCCAAA 2458
Qy       1681 GATGAAGAGGGCAGGGCCAGCCAGGAGGGACCCCCAGGTCCAGAGTGA 1728
Db       2459 GATGAAGAGGGCAGGGCCAGCCAGGAGGGACCCCCAGGTCCAGAGTGA 2506
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RESULT 8
US-09-735-932-1
; Sequence 1, Application US/09735932
; Patent No. US20020037548A1
; GENERAL INFORMATION:
; APPLICANT: GUEGLER, Karl et al

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; TITLE OF INVENTION: ISOLATED HUMAN TRANSPORTER PROTEINS,
; TITLE OF INVENTION: NUCLEIC ACID MOLECULES ENCODING HUM AN TRANSPORTER PROTEINS,
; TITLE OF INVENTION: AND USES THEREOF
; FILE REFERENCE: CL000663
; CURRENT APPLICATION NUMBER: US/09/735,932
; CURRENT FILING DATE: 2000-12-14
; NUMBER OF SEQ ID NOS: 4
; SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 1
; LENGTH: 1755
; TYPE: DNA
; ORGANISM: Human
US-09-735-932-1

  Query Match            99.6%;  Score 1721.6;  DB 9;  Length 1755;
  Best Local Similarity  99.8%;  Pred. No. 0;
  Matches 1724;  Conservative    0;  Mismatches    4;  Indels    0;  Gaps    0;

Qy          1 ATGAGCCAGGACACCAAAGTGAAGACAACAGAGTCCAGTCCCCCAGCCCCATCCAAGGCC 60
Db         11 ATGAGCCAGGACACCAAAGTGAAGACAACAGAGTCCAGTCCCCCAGCCCCATCCAAGGCC 70
Qy         61 AGGAAGTTGCTGCCTGTCCTGGACCCATCTGGGGATTACTACTACTGGTGGCTGAACACA 120
Db         71 AGGAAGTTGCTGCCTGTCCTGGACCCATCTGGGGATTACTACTACTGGTGGCTGAACACA 130
Qy        121 ATGGTCTTCCCAGTCATGTATAACCTCATCATCCTCGTGTGCAGAGCCTGCTTCCCCGAC 180
Db        131 ATGGTCTTCCCAGTCATGTATAACCTCATCATCCTCGTGTGCAGAGCCTGCTTCCCCGAC 190
Qy        181 TTGCAGCACGGTTATCTGGTGGCCTGGTTGGTGCTGGACTACACGAGTGACCTGCTATAC 240
Db        191 TTGCAGCACGGTTATCTGGTGGCCTGGTTGGTGTTGGACTACACGAGTGACCTGCTATAC 250
Qy        241 CTACTAGACATGGTGGTGCGCTTCCACACAGGATTCTTGGAACAGGGCATCCTGGTGGTG 300
Db        251 CTACTAGACATGGTGGTGCGCTTCCACACAGGATTCTTGGAACAGGGCATCCTGGTGGTG 310
Qy        301 GACAAGGGTAGGATCTCGAGTCGCTACGTTCGCACCTGGAGTTTCTTCTTGGACCTGGCT 360
Db        311 GACAAGGGTAGGATCTCGAGTCGCTACGTTCGCACCTGGAGTTTCTTCTTGGACCTGGCT 370
Qy        361 TCCCTGATGCCCACAGATGTGGTCTACGTGCGGCTGGGCCCGCACACACCCACCCTGAGG 420
Db        371 TCCCTGATGCCCACAGATGTGGTCTACGTGCGGCTGGGCCCGCACACACCCACCCTGAGG 430
Qy        421 CTGAACCGCTTTCTCCGCGCGCCCCCGCCTCTTCGAGGCCTTCGACCGCACAGAGACCCGC 480
Db        431 CTGAACCGCTTTCTCCGCGCGCCCCCGCCTCTTCGAGGCCTTCGACCGCACAGAGACCCGC 490
Qy        481 ACAGCTTACCCAAATGCCTTTCGCATTGCCAAGCTGATGCTTTACATTTTTGTCGTCATC 540
Db        491 ACAGCTTACCCAAATGCCTTTCGCATTGCCAAGCTGATGCTTTACATTTTTGTCGTCATC 550
Qy        541 CATTGGAACAGCTGCCTATACTTTGCCCTATCCCGGTACCTGGGCTTCGGGCGTGACGCA 600
Db        551 CATTGGAACAGCTGCCTATACTTTGCCCTATCCCGGTACCTGGGCTTCGGGCGTGACGCA 610
Qy        601 TGGGTGTACCCGGACCCCGCGCAGCCTGGCTTTGAGCGCCTGCGGCGCCAGTACCTCTAT 660
Db        611 TGGGTGTACCCGGACCCCGCGCAGCCTGGCTTTGAGCGCCTGCGGCGCCAGTACCTCTAT 670
Qy        661 AGCTTTTACTTCTCCACGCTGATACTGACTACAGTGGGCGATACACCGCCGCCAGCCAGG 720
Db        671 AGCTTTTACTTCTCCACGCTGATACTGACTACAGTGGGCGATACACCGCCGCCAGCCAGG 730
Qy        721 GAAGAAGAGTACCTCTTCATGGTGGGCGACTTCCTGCTGGCCGTCATGGGTTTCGCCACC 780
Db        731 GAAGAAGAGTACCTCTTCATGGTGGGCGACTTCCTGCTGGCCGTCATGGGTTTCGCCACC 790
Qy        781 ATCATGGGTAGCATGAGCTCTGTCATCTACAACATGAACACTGCAGATGCGGCTTTCTAC 840
Db        791 ATCATGGGTAGCATGAGCTCTGTCATCTACAACATGAACACTGCAGATGCGGCTTTCTAC 850
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Qy        841 CCAGATCATGCACTGGTGAAGAAGTACATGAAGCTGCAGCACGTCAACCGCAAGCTGGAG 900
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        851 CCAGATCATGCACTGGTGAAGAAGTACATGAAGCTGCAGCACGTCAACCGCAAGCTGGAG 910

Qy        901 CGGCGAGTTATTGACTGGTATCAGCACCTGCAGATCAACAAGAAGATGACCAACGAGGTA 960
              |||||||||||||||||||||||||||||||||||||||||||||||||||| ||||||||||
Db        911 CGGCGAGTTATTGACTGGTATCAGCACCTGCAGATCAACAAGAAGATGTCCAACGAGGTA 970

Qy        961 GCCATCTTACAGCACTTGCCTGAGCGGCTGCGGGCAGAAGTGGCTGTGTCTGTGCACCTG 1020
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        971 GCCATCTTACAGCACTTGCCTGAGCGGCTGCGGGCAGAAGTGGCTGTGTCTGTGCACCTG 1030

Qy       1021 TCCACTCTGAGCCGGGTGCAGATCTTTCAGAACTGTGAGGCCAGCCTGCTGGAGGAGCTG 1080
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1031 TCCACTCTGAGCCGGGTGCAGATCTTTCAGAACTGTGAGGCCAGCCTGCTGGAGGAGCTG 1090

Qy       1081 GTGCTGAAGCTGCAGCCCCAGACCTACTCACCAGGTGAATATGTATGCCGCAAAGGAGAC 1140
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1091 GTGCTGAAGCTGCAGCCCCAGACCTACTCACCAGGTGAATATGTATGCCGCAAAGGAGAC 1150

Qy       1141 ATTGGCCAAGAGATGTACATCATCCGAGAGGGTCAACTGGCCGTGGTGGCAGATGATGGT 1200
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1151 ATTGGCCAAGAGATGTACATCATCCGAGAGGGTCAACTGGCCGTGGTGGCAGATGATGGT 1210

Qy       1201 ATCACACAGTATGCTGTGCTCGGTGCAGGGCTCTACTTTGGGGAGATCAGCATCATCAAC 1260
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Db       1211 ATCACACAGTATGCTGTGCTCGGTGCAGGGCTCTACTTTGGGGAGATCAGCATCATCAAC 1270

Qy       1261 ATCAAAGGGAACATGTCTGGGAACCGCCGCACAGCCAACATCAAGAGCCTAGGTTATTCA 1320
              |||||||||||||||||||||||||||||| ||||||||||||||||||||||||||||
Db       1271 ATCAAAGGGAACATGTCTGGGAACCGCCGCACAACCAACATCAAGAGCCTAGGTTATTCA 1330

Qy       1321 GACCTATTCTGCCTGAGCAAGGAGGACCTGCGGGAGGTGCTGAGCGAGTATCCACAAGCA 1380
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1331 GACCTATTCTGCCTGAGCAAGGAGGACCTGCGGGAGGTGCTGAGCGAGTATCCACAAGCA 1390

Qy       1381 CAGACCATCATGGAGGAGAAAGGACGTGAGATCCTGCTGAAAATGAACAAGTTGGACGTG 1440
              |||||||||||||||||||||||||||||||||||||||||||| ||||||||||||||
Db       1391 CAGACCATCATGGAGGAGAAAGGACGTGAGATCCTGCTGAAAATGAGCAAGTTGGACGTG 1450

Qy       1441 AATGCTGAGGCAGCTGAGATCGCCCTGCAGGAGGCCACAGAGTCCCGGCTACGAGGCCTA 1500
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1451 AATGCTGAGGCAGCTGAGATCGCCCTGCAGGAGGCCACAGAGTCCCGGCTACGAGGCCTA 1510

Qy       1501 GACCAGCAGCTGGATGATCTACAGACCAAGTTTGCTCGCCTCCTGGCTGAGCTGGAGTCC 1560
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1511 GACCAGCAGCTGGATGATCTACAGACCAAGTTTGCTCGCCTCCTGGCTGAGCTGGAGTCC 1570

Qy       1561 AGCGCACTTAAGATTGCTTACCGCATTGAACGGCTGGAGTGGCAGACTCGAGAGTGGCCA 1620
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1571 AGCGCACTTAAGATTGCTTACCGCATTGAACGGCTGGAGTGGCAGACTCGAGAGTGGCCA 1630

Qy       1621 ATGCCCGAGGACCTGGCTGAGGCTGATGACGAGGGTGAGCCTGAGGAGGGAACTTCCAAA 1680
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1631 ATGCCCGAGGACCTGGCTGAGGCTGATGACGAGGGTGAGCCTGAGGAGGGAACTTCCAAA 1690

Qy       1681 GATGAAGAGGGCAGGGCCAGCCAGGAGGGACCCCCAGGTCCAGAGTGA 1728
              ||||||||||||||||||||||||||||||||||||||||||||||||
Db       1691 GATGAAGAGGGCAGGGCCAGCCAGGAGGGACCCCCAGGTCCAGAGTGA 1738
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RESULT 9
US-10-207-951-1
; Sequence 1, Application US/10207951
; Publication No. US20030013156A1
; GENERAL INFORMATION:
; APPLICANT: Karl GUEGLER et al.
; TITLE OF INVENTION: ISOLATED HUMAN TRANSPORTER PROTEINS,
; TITLE OF INVENTION: NUCLEIC ACID MOLECULES ENCODING HUMAN TRANSPORTER PROTEINS
; TITLE OF INVENTION: AND USES THEREOF
; FILE REFERENCE: CL000663CON
; CURRENT APPLICATION NUMBER: US/10/207,951
; CURRENT FILING DATE: 2002-07-31
; PRIOR APPLICATION NUMBER: 09/735,932
; PRIOR FILING DATE: 2000-12-14
; PRIOR APPLICATION NUMBER: 60/211,223
; PRIOR FILING DATE: 2000-06-13
; NUMBER OF SEQ ID NOS: 25
; SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 1
; LENGTH: 1758
; TYPE: DNA
; ORGANISM: Homo sapiens
; FEATURE:
; NAME/KEY: misc_feature
; LOCATION: (1)...(1758)
; OTHER INFORMATION: n = A,T,C or G
US-10-207-951-1

Query Match 99.6%; Score 1721.6; DB 15; Length 1758;
Best Local Similarity 99.8%; Pred. No. 0;
Matches 1724; Conservative 0; Mismatches 4; Indels 0; Gaps 0;

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Db         11 ATGAGCCAGGACACCAAAGTGAAGACAACAGAGTCCAGTCCCCCAGCCCCATCCAAGGCC 70

Qy         61 AGGAAGTTGCTGCCTGTCCTGGACCCATCTGGGGATTACTACTACTGGTGGCTGAACACA 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         71 AGGAAGTTGCTGCCTGTCCTGGACCCATCTGGGGATTACTACTACTGGTGGCTGAACACA 130

Qy        121 ATGGTCTTCCCAGTCATGTATAACCTCATCATCCTCGTGTGCAGAGCCTGCTTCCCCGAC 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        131 ATGGTCTTCCCAGTCATGTATAACCTCATCATCCTCGTGTGCAGAGCCTGCTTCCCCGAC 190

Qy        181 TTGCAGCACGGTTATCTGGTGGCCTGGTTGGTGCTGGACTACACGAGTGACCTGCTATAC 240
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        191 TTGCAGCACGGTTATCTGGTGGCCTGGTTGGTGTTGGACTACACGAGTGACCTGCTATAC 250

Qy        241 CTACTAGACATGGTGGTGCGCTTCCACACAGGATTCTTGGAACAGGGCATCCTGGTGGTG 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        251 CTACTAGACATGGTGGTGCGCTTCCACACAGGATTCTTGGAACAGGGCATCCTGGTGGTG 310

Qy        301 GACAAGGGTAGGATCTCGAGTCGCTACGTTCGCACCTGGAGTTTCTTCTTGGACCTGGCT 360
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        311 GACAAGGGTAGGATCTCGAGTCGCTACGTTCGCACCTGGAGTTTCTTCTTGGACCTGGCT 370

Qy        361 TCCCTGATGCCCACAGATGTGGTCTACGTGCGGCTGGGCCCGCACACACCCACCCTGAGG 420
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        371 TCCCTGATGCCCACAGATGTGGTCTACGTGCGGCTGGGCCCGCACACACCCACCCTGAGG 430

Qy        421 CTGAACCGCTTTCTCCGCGCGCCCCGCCTCTTCGAGGCCTTCGACCGCACAGAGACCCGC 480
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        431 CTGAACCGCTTTCTCCGCGCGCCCCGCCTCTTCGAGGCCTTCGACCGCACAGAGACCCGC 490

Qy        481 ACAGCTTACCCAAATGCCTTTCGCATTGCCAAGCTGATGCTTTACATTTTTGTCGTCATC 540
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        491 ACAGCTTACCCAAATGCCTTTCGCATTGCCAAGCTGATGCTTTACATTTTTGTCGTCATC 550

Qy        541 CATTGGAACAGCTGCCTATACTTTGCCCTATCCCGGTACCTGGGCTTCGGGCGTGACGCA 600
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        551 CATTGGAACAGCTGCCTATACTTTGCCCTATCCCGGTACCTGGGCTTCGGGCGTGACGCA 610

Qy        601 TGGGTGTACCCGGACCCCGCGCAGCCTGGCTTTGAGCGCCTGCGGCGCCAGTACCTCTAT 660
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        611 TGGGTGTACCCGGACCCCGCGCAGCCTGGCTTTGAGCGCCTGCGGCGCCAGTACCTCTAT 670

Qy        661 AGCTTTTACTTCTCCACGCTGATACTGACTACAGTGGGCGATACACCGCCGCCAGCCAGG 720
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        671 AGCTTTTACTTCTCCACGCTGATACTGACTACAGTGGGCGATACACCGCCGCCAGCCAGG 730

Qy        721 GAAGAAGAGTACCTCTTCATGGTGGGCGACTTCCTGCTGGCCGTCATGGGTTTCGCCACC 780
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        731 GAAGAAGAGTACCTCTTCATGGTGGGCGACTTCCTGCTGGCCGTCATGGGTTTCGCCACC 790
```

```
Qy        781 ATCATGGGTAGCATGAGCTCTGTCATCTACAACATGAACACTGCAGATGCGGCTTTCTAC 840
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        791 ATCATGGGTAGCATGAGCTCTGTCATCTACAACATGAACACTGCAGATGCGGCTTTCTAC 850

Qy        841 CCAGATCATGCACTGGTGAAGAAGTACATGAAGCTGCAGCACGTCAACCGCAAGCTGGAG 900
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        851 CCAGATCATGCACTGGTGAAGAAGTACATGAAGCTGCAGCACGTCAACCGCAAGCTGGAG 910

Qy        901 CGGCGAGTTATTGACTGGTATCAGCACCTGCAGATCAACAAGAAGATGACCAACGAGGTA 960
              |||||||||||||||||||||||||||||||||||||||||||||| ||||||||||||
Db        911 CGGCGAGTTATTGACTGGTATCAGCACCTGCAGATCAACAAGAAGATGTCCAACGAGGTA 970

Qy        961 GCCATCTTACAGCACTTGCCTGAGCGGCTGCGGGCAGAAGTGGCTGTGTCTGTGCACCTG 1020
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        971 GCCATCTTACAGCACTTGCCTGAGCGGCTGCGGGCAGAAGTGGCTGTGTCTGTGCACCTG 1030

Qy       1021 TCCACTCTGAGCCGGGTGCAGATCTTTCAGAACTGTGAGGCCAGCCTGCTGGAGGAGCTG 1080
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1031 TCCACTCTGAGCCGGGTGCAGATCTTTCAGAACTGTGAGGCCAGCCTGCTGGAGGAGCTG 1090

Qy       1081 GTGCTGAAGCTGCAGCCCCAGACCTACTCACCAGGTGAATATGTATGCCGCAAAGGAGAC 1140
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1091 GTGCTGAAGCTGCAGCCCCAGACCTACTCACCAGGTGAATATGTATGCCGCAAAGGAGAC 1150

Qy       1141 ATTGGCCAAGAGATGTACATCATCCGAGAGGGTCAACTGGCCGTGGTGGCAGATGATGGT 1200
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1151 ATTGGCCAAGAGATGTACATCATCCGAGAGGGTCAACTGGCCGTGGTGGCAGATGATGGT 1210

Qy       1201 ATCACACAGTATGCTGTGCTCGGTGCAGGGCTCTACTTTGGGGAGATCAGCATCATCAAC 1260
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1211 ATCACACAGTATGCTGTGCTCGGTGCAGGGCTCTACTTTGGGGAGATCAGCATCATCAAC 1270

Qy       1261 ATCAAAGGGAACATGTCTGGGAACCGCCGCACAGCCAACATCAAGAGCCTAGGTTATTCA 1320
              |||||||||||||||||||||||||||||| ||||||||||||||||||||||||||||
Db       1271 ATCAAAGGGAACATGTCTGGGAACCGCCGCACAACCAACATCAAGAGCCTAGGTTATTCA 1330

Qy       1321 GACCTATTCTGCCTGAGCAAGGAGGACCTGCGGGAGGTGCTGAGCGAGTATCCACAAGCA 1380
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1331 GACCTATTCTGCCTGAGCAAGGAGGACCTGCGGGAGGTGCTGAGCGAGTATCCACAAGCA 1390

Qy       1381 CAGACCATCATGGAGGAGAAAGGACGTGAGATCCTGCTGAAAATGAACAAGTTGGACGTG 1440
              |||||||||||||||||||||||||||||||||||||||||||||| ||||||||||||
Db       1391 CAGACCATCATGGAGGAGAAAGGACGTGAGATCCTGCTGAAAATGAGCAAGTTGGACGTG 1450

Qy       1441 AATGCTGAGGCAGCTGAGATCGCCCTGCAGGAGGCCACAGAGTCCCGGCTACGAGGCCTA 1500
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1451 AATGCTGAGGCAGCTGAGATCGCCCTGCAGGAGGCCACAGAGTCCCGGCTACGAGGCCTA 1510

Qy       1501 GACCAGCAGCTGGATGATCTACAGACCAAGTTTGCTCGCCTCCTGGCTGAGCTGGAGTCC 1560
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1511 GACCAGCAGCTGGATGATCTACAGACCAAGTTTGCTCGCCTCCTGGCTGAGCTGGAGTCC 1570

Qy       1561 AGCGCACTTAAGATTGCTTACCGCATTGAACGGCTGGAGTGGCAGACTCGAGAGTGGCCA 1620
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1571 AGCGCACTTAAGATTGCTTACCGCATTGAACGGCTGGAGTGGCAGACTCGAGAGTGGCCA 1630

Qy       1621 ATGCCCGAGGACCTGGCTGAGGCTGATGACGAGGGTGAGCCTGAGGAGGGAACTTCCAAA 1680
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1631 ATGCCCGAGGACCTGGCTGAGGCTGATGACGAGGGTGAGCCTGAGGAGGGAACTTCCAAA 1690

Qy       1681 GATGAAGAGGGCAGGGCCAGCCAGGAGGGACCCCCAGGTCCAGAGTGA 1728
              ||||||||||||||||||||||||||||||||||||||||||||||||
Db       1691 GATGAAGAGGGCAGGGCCAGCCAGGAGGGACCCCCAGGTCCAGAGTGA 1738
```

```
RESULT 10
US-09-842-758-27
; Sequence 27, Application US/09842758
; Publication No. US20030083244A1
; GENERAL INFORMATION:
;  APPLICANT: Vernet, Corine A. M.
;  APPLICANT:  Fernandes, Elma R
;  APPLICANT:  Gerlach, Valerie
;  APPLICANT:  Shimkets, Richard A
;  APPLICANT:  Malyankar, Uriel M
;  APPLICANT:  Boldog, Ferenc L
;  APPLICANT:  Zerhusen, Bryan D
;  APPLICANT:  Spytek, Kimberly A
;  APPLICANT:  Majumder, Kumud
;  APPLICANT:  Tchernev, Velizar T
;  APPLICANT:  Padigaru, Muralidhara
;  APPLICANT:  Patturajan, Meera
;  APPLICANT:  Burgess, Catherine E
;  APPLICANT:  Gangolli, Esha A
;  APPLICANT:  Smithson, Glennda
;  APPLICANT:  Rastelli, Luca
;  APPLICANT:  MacDougall, John R
;  APPLICANT:  Taupier, Raymond J
;  APPLICANT:  Grosse, William M
;  APPLICANT:  Edward, Szekeres S
;  APPLICANT:  Alsobrook II, John P
;  TITLE OF INVENTION: No. US20030083244A1el Proteins and Nucleic Acids Encoding Same
;  FILE REFERENCE: 15966-783
;  CURRENT APPLICATION NUMBER: US/09/842,758
;  CURRENT FILING DATE:  2001-04-25
;  PRIOR APPLICATION NUMBER: 60/200,158
;  PRIOR FILING DATE: 2000-04-26
;  PRIOR APPLICATION NUMBER: 60/200,613
;  PRIOR FILING DATE: 2000-04-28
;  PRIOR APPLICATION NUMBER: 60/200,780
;  PRIOR FILING DATE: 2000-04-28
;  PRIOR APPLICATION NUMBER: 60/201,006
;  PRIOR FILING DATE: 2000-05-01
;  PRIOR APPLICATION NUMBER: 60/201,007
;  PRIOR FILING DATE: 2000-05-01
;  PRIOR APPLICATION NUMBER: 60/201,236
;  PRIOR FILING DATE: 2000-05-01
;  PRIOR APPLICATION NUMBER: 60/201,238
;  PRIOR FILING DATE: 2000-05-01
;  PRIOR APPLICATION NUMBER: 60/201,186
;  PRIOR FILING DATE: 2000-05-02
;  PRIOR APPLICATION NUMBER: 60/201,474
;  PRIOR FILING DATE: 2000-05-03
;  PRIOR APPLICATION NUMBER: 60/201,508
;  PRIOR FILING DATE: 2000-05-03
;  PRIOR APPLICATION NUMBER: 60/220,591
;  PRIOR FILING DATE: 2000-07-25
;  PRIOR APPLICATION NUMBER: 60/232,678
;  PRIOR FILING DATE: 2000-09-15
;  PRIOR APPLICATION NUMBER: 60/263,217
;  PRIOR FILING DATE: 2001-01-22
;  PRIOR APPLICATION NUMBER: 60/265,160
;  PRIOR FILING DATE: 2001-01-30
;  NUMBER OF SEQ ID NOS: 113
;  SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 27
;   LENGTH: 1835
;   TYPE: DNA
;   ORGANISM: Homo sapiens
US-09-842-758-27

  Query Match             97.7%;  Score 1687.4;  DB 10;  Length 1835;
  Best Local Similarity   99.4%;  Pred. No. 0;
  Matches 1727;  Conservative    0;  Mismatches    1;  Indels    9;  Gaps    3;

Qy          1 ATGAGCCAGGACACCAAAGTGAAGACAACAGAGTCCAGTCCCCCAGCCCCATCCAAGGCC 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         54 ATGAGCCAGGACACCAAAGTGAAGACAACAGAGTCCAGTCCCCCAGCCCCATCCAAGGCC 113

Qy         61 ---AGGAAGTTGCTGCCTGTCCTGGACCCATCTGGGGATTACTACTACTGGTGGCTGAAC 117
                 ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        114 AGGAGGAAGTTGCTGCCTGTCCTGGACCCATCTGGGGATTACTACTACTGGTGGCTGAAC 173

Qy        118 ACAATGGTCTTCCCAGTCATGTATAACCTCATCATCCTCGTGTGCAGAGCCTGCTTCCCC 177
              |||||||||||||||||||||||||||||||||||||||||||||| ||||||||||||
Db        174 ACAATGGTCTTCCCAGTCATGTATAACCTCATCATCCTCGTGTGCAGGGCCTGCTTCCCC 233
```

Membrane spanning structure and domains:

| Helix | Begin | End | Score | Certainty |
|---|---|---|---|---|
| 1 | 34 | 54 | 1.356 | Certain |
| 2 | 113 | 133 | 1.402 | Certain |
| 3 | 176 | 196 | 1.371 | Certain |
| 4 | 222 | 242 | 1.207 | Certain |
| 5 | 255 | 275 | 2.033 | Certain |
| 6 | 406 | 426 | 0.915 | Putative |

**BLAST Alignment to Top Hit:**

>gi|2493746|sp|Q64359|CNGX_RAT CYCLIC-NUCLEOTIDE-GATED OLFACTORY CHANNEL OCNC2 SUBUNIT >gi|2143887|pir||I59327 olfactory cyclic nucleotide gated cation channel - rat >gi|538129|gb|AAA21464.1| (U12623) cyclic nucleotide gated cation channel [Rattus norvegicus] >gi|548084|gb|AAA64748.1| (U12425) olfactory cyclic nucleotide-gated channel [Rattus norvegicus]
Length = 575

Score = 1039 bits (2657), Expect = 0.0
Identities = 517/580 (89%), Positives = 535/580 (92%), Gaps = 5/580 (0%)

```
Query: 1   MSQDTKVKTTESSPPAPSKARKLLPVLDPSGDYYYWWLNTMVFPVMYNLIILVCRACFPD 60
            MSQD KVKTTES+PPAP+KARK LPVLDPSGDYYYWWLNTMVFP+MYNLII+VCRACFPD
Sbjct: 1   MSQDGKVKTTESTPPAPTKARKWLPVLDPSGDYYYWWLNTMVFPIMYNLIIVVCRACFPD 60

Query: 61  LQHGYLVAWLVLDYTSDLLYLLDMVVRFHTGQISWNRGILGGGTRGKDLRVRLPSAPGSF 120
            LQH YLVAW VLDYTSDLLYLLD+ VRFHTG +   +GIL      K +          SF
Sbjct: 61  LQHSYLVAWFVLDYTSDLLYLLDIGVRFHTGFLE--QGIL---VVDKGMIASRYVRTWSF 115

Query: 121 FLGPGFLMPTDVVYVRLGPHTPTLRLNRFLRAPRLFEAFDRTETRTAYPNAFRIAKLMLY 180
             L    L+PTD  YV+LGPH PTLRLNRFLR PRLFEAFDRTETRTAYPNAFRIAKLMLY
Sbjct: 116 LLDLASLVPTDAAYVQLGPHIPTLRLNRFLRVPRLFEAFDRTETRTAYPNAFRIAKLMLY 175

Query: 181 IFVVIHWNSCLYFALSRYLGFGRDAWVYPDPAQPGFERLRRQYLYSFYFSTLILTTVGDT 240
            IFVVIHWNSCLYFALSRYLGFGRDAWVYPDPAQPGFERLRRQYLYSFYFSTLILTTVGDT
Sbjct: 176 IFVVIHWNSCLYFALSRYLGFGRDAWVYPDPAQPGFERLRRQYLYSFYFSTLILTTVGDT 235

Query: 241 PPPAREEEYLFMVGDFLLAVMGFATIMGSMSSVIYNMNTADAAFYPDHALVKKYMKLQHV 300
            P P REEEYLFMVGDFLLAVMGFATIMGSMSSVIYNMNTADAAFYPDHALVKKYMKLQHV
Sbjct: 236 PLPDREEEYLFMVGDFLLAVMGFATIMGSMSSVIYNMNTADAAFYPDHALVKKYMKLQHV 295

Query: 301 NRKLERRVIDWYQHLQINKKMTNEVAILQHLPERLRAEVAVSVHLSTLSRVQIFQNCEAS 360
            N++LERRVIDWYQHLQINKKMTNEVAILQHLPERLRAEVAVSVHLSTLSRVQIFQNCEAS
Sbjct: 296 NKRLERRVIDWYQHLQINKKMTNEVAILQHLPERLRAEVAVSVHLSTLSRVQIFQNCEAS 355

Query: 361 LLEELVLKLQPQTYSPGEYVCRKGDIGQEMYIIREGQLAVVADDGITQYAVLGAGLYFGE 420
            LLEELVLKLQPQTYSPGEYVCRKGDIG+EMYIIREGQLAVVADDG+TQYAVLGAGLYFGE
Sbjct: 356 LLEELVLKLQPQTYSPGEYVCRKGDIGREMYIIREGQLAVVADDGVTQYAVLGAGLYFGE 415

Query: 421 ISIINIKGNMSGNRRTANIKSLGYSDLFCLSKEDLREVLSEYPQAQTIMEEKGREILLKM 480
            ISIINIKGNMSGNRRTANIKSLGYSDLFCLSKEDLREVLSEYPQAQ +MEEKGREILLKM
Sbjct: 416 ISIINIKGNMSGNRRTANIKSLGYSDLFCLSKEDLREVLSEYPQAQAVMEEKGREILLKM 475

Query: 481 NKLDVNAEAAEIALQEATESRLRGLDQQLDDLQTKFARLLAELESSALKIAYRIERLEWQ 540
            NKLDVNAEAAEIALQEATESRL+GLDQQLDDLQTKFARLLAELESSALKIAYRIERLEWQ
Sbjct: 476 NKLDVNAEAAEIALQEATESRLKGLDQQLDDLQTKFARLLAELESSALKIAYRIERLEWQ 535

Query: 541 TREWPMPEDLAEADDEGEPEEGTSKDEEGRASQEGPPGPE 580
            TREWPMPED+ EADDE EP EGTSKD EG+A Q GP G E
Sbjct: 536 TREWPMPEDMGEADDEAEPGEGTSKDGEGKAGQAGPSGIE 575
```

← identical to SEQ ID NO:1



FIGURE 2, page 2 of 3

```
   1  ATGAGCCAGG ACACCAAAGT GAAGACAACA GAGTCCAGTC CCCCAGCCCC
  51  ATCCAAGGCC AGGAAGTTGC TGCCTGTCCT GGACCCATCT GGGGATTACT
 101  ACTACTGGTG GCTGAACACA ATGGTCTTCC CAGTCATGTA TAACCTCATC
 151  ATCCTCGTGT GCAGAGCCTG CTTCCCCGAC TTGCAGCACG GTTATCTGGT
 201  GGCCTGGTTG GTGCTGGACT ACACGAGTGA CCTGCTATAC CTACTAGACA
 251  TGGTGGTGCG CTTCCACACA GGTCAGATTT CTTGGAACAG GGGCATCCTG
 301  GGTGGTGGGA CAAGGGGTAA GGATCTCCGA GTTCGCCTAC CGTCCGCACC
 351  TGGGAGTTTC TTTCTTGGAC CTGGCTTCCT GATGCCCACA GATGTGGTCT
 401  ACGTGCGGCT GGGCCCGCAC ACACCCACCC TGAGGCTGAA CCGCTTTCTC
 451  CGCGCGCCCC GCCTCTTCGA GGCCTTCGAC CGCACAGAGA CCCGCACAGC
 501  TTACCCAAAT GCCTTTCGCA TTGCCAAGCT GATGCTTTAC ATTTTTGTCG
 551  TCATCCATTG GAACAGCTGC CTATACTTTG CCCTATCCCG GTACCTGGGC
 601  TTCGGGCGTG ACGCATGGGT GTACCCGGAC CCCGCGCAGC CTGGCTTTGA
 651  GCGCCTGCGG CGCCAGTACC TCTATAGCTT TTACTTCTCC ACGCTGATAC
 701  TGACTACAGT GGGCGATACA CCGCCGCCAG CCAGGGAAGA AGAGTACCTC
 751  TTCATGGTGG GCGACTTCCT GCTGGCCGTC ATGGGTTTCG CCACCATCAT
 801  GGGTAGCATG AGCTCTGTCA TCTACAACAT GAACACTGCA GATGCGGCTT
 851  TCTACCCAGA TCATGCACTG GTGAAGAAGT ACATGAAGCT GCAGCACGTC
 901  AACCGCAAGC TGGAGCGGCG AGTTATTGAC TGGTATCAGC ACCTGCAGAT
 951  CAACAAGAAG ATGACCAACG AGGTAGCCAT CTTACAGCAC TTGCCTGAGC
1001  GGCTGCGGGC AGAAGTGGCT GTGTCTGTGC ACCTGTCCAC TCTGAGCCGG
1051  GTGCAGATCT TTCAGAACTG TGAGGCCAGC CTGCTGGAGG AGCTGGTGCT
1101  GAAGCTGCAG CCCCAGACCT ACTCACCAGG TGAATATGTA TGCCGCAAAG
1151  GAGACATTGG CCAAGAGATG TACATCATCC GAGAGGGTCA ACTGGCCGTG
1201  GTGGCAGATG ATGGTATCAC ACAGTATGCT GTGCTCGGTG CAGGGCTCTA
1251  CTTTGGGGAG ATCAGCATCA TCAACATCAA AGGGAACATG TCTGGGAACC
1301  GCCGCACAGC CAACATCAAG AGCCTAGGTT ATTCAGACCT ATTCTGCCTG
1351  AGCAAGGAGG ACCTGCGGGA GGTGCTGAGC GAGTATCCAC AAGCACAGAC
1401  CATCATGGAG GAGAAAGGAC GTGAGATCCT GCTGAAAATG AACAAGTTGG
1451  ACGTGAATGC TGAGGCAGCT GAGATCGCCC TGCAGGAGGC CACAGAGTCC
1501  CGGCTACGAG GCCTAGACCA GCAGCTGGAT GATCTACAGA CCAAGTTTGC
1551  TCGCCTCCTG GCTGAGCTGG AGTCCAGCGC ACTTAAGATT GCTTACCGCA
1601  TTGAACGGCT GGAGTGGCAG ACTCGAGAGT GGCCAATGCC CGAGGACCTG
1651  GCTGAGGCTG ATGACGAGGG TGAGCCTGAG GAGGGAACTT CCAAAGATGA
1701  AGAGGGCAGG GCCAGCCAGG AGGGACCCCC AGGTCCAGAG TGA
```

← identical to SEQ ID NO: 3

**FEATURES:**
Start: 1
Stop: 1741

**HOMOLOGOUS PROTEINS:**
Top 10 BLAST Hits:

| | | |
|---|---|---|
| gi\|2493746\|sp\|Q64359\|CNGX_RAT CYCLIC-NUCLEOTIDE-GATED OLFACTORY... | 1039 | 0.0 |
| gi\|2493747\|sp\|Q29441\|CNG3_BOVIN CYCLIC-NUCLEOTIDE-GATED CATION ... | 580 | e-165 |
| gi\|7688041\|emb\|CAB89685.1\| (AJ243933) cyclic nucleotide-gated c... | 577 | e-163 |
| gi\|2780734\|dbj\|BAA24353.1\| (AB002801) cyclic nucleotide-gated c... | 576 | e-163 |
| gi\|399230\|sp\|Q03041\|CNG2_BOVIN CYCLIC-NUCLEOTIDE-GATED OLFACTOR... | 575 | e-163 |
| gi\|4826633\|emb\|CAB42891.1\| (AJ238239) cyclic nucleotide-gated c... | 573 | e-162 |
| gi\|2493751\|sp\|Q90805\|CNG1_CHICK CYCLIC NUCLEOTIDE GATED CHANNEL... | 573 | e-162 |
| gi\|346350\|pir\|\|A44842 cGMP-gated ion channel protein - human >g... | 570 | e-161 |
| gi\|479946\|pir\|\|S35691 cyclic nucleotide-gated channel protein -... | 570 | e-161 |
| gi\|2493745\|sp\|Q28718\|CNG2_RABIT CYCLIC-NUCLEOTIDE-GATED OLFACTO... | 570 | e-161 |

**blast to dbEST:**
no match

FIGURE 1